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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

RAO, MANJUNATH N

ART UNIT PAPER NUMBER

1652

DATE MAILED: 01/25/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/674,477

Applicant(s)

BAECK ET AL.

Examiner

Manjunath N Rao

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Claims 1, 2, 15-28 are now pending in this application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 15-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 2, 15-25 recite the phrase "softening protein". It is not clear to the Examiner as what is the scope of the term "softening". Amending the claim to recite "fabric softening protein" would overcome this rejection.

Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 17-19 recite the phrase " amino acids....are cross-linked". It is not clear to the Examiner as to whether the amino acids are cross-linked to each other by peptide bonds, by other bonds other than the peptide bonds or whether they are cross-linked with something else.

Claims 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 15-20 are confusing in that they are drawn to "softening protein hybrid or fabric care composition according to claim 1". However, claim 1 does not recite fabric care composition.

Claims 21-25 are similarly rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. Claims 21-25 are confusing in that they are drawn to a "softening protein hybrid of claim 2". However, claim 2 is not drawn to a softening protein hybrid.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 2 and claims 26-28 which depend from claim 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Schulein et al. (WO 94/07998, 14 April, 1994). This rejection is based upon the public availability of a printed publication. Claim 2 of the instant application is drawn to a fabric care composition comprising one or more amino acid sequence(s) comprising a cellulose binding domain and/or a softening protein hybrid. Schulein et al. disclose a fabric care composition comprising one or more amino acid sequence(s) comprising a cellulose binding domain, thereby anticipating claim 2 of this application.

Claims 1-2, 15-19, 21-22, 25 and claims 26-28 which depend from claim 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilkes et al. (WO 93/05226, 18 Mar 1993). This rejection is based upon the public availability of a printed publication. Claim 1-2, 15-19, 21-22 and 25 of the instant application are drawn to a fabric softening protein hybrid or fabric care composition containing such a hybrid protein wherein the hybrid protein comprises a cellulose binding domain (CBD) selected from a group consisting of CBD from *Cellulomonas fimi*, linked to a softening protein selected from a group consisting of inactive enzyme, wherein the CBD and the softening protein are linked via a linking region comprising amino acids. Gilkes et al. disclose the construction of such a hybrid protein wherein the CBD is drawn from *C.fimi* and linked through a stretch of amino acids to an active or an inactive enzyme and use of such a

hybrid protein in detergent compositions. Therefore Gilkes et al. anticipate claims 1-2, 15-19, 21-22 and 25 as written.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 15-22, 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulein et al. and Gilkes et al. as applied to claims 1-2, 15-19, 21-22 and 25 above, and further in view of Linder et al. (J. Biol. Chem., Vol. 271(35):21268-21272, 1996) and the high level of knowledge existing in the art of making detergent compositions. Claims 1-2, 15-22, 25-28 are drawn to a fabric softening protein hybrid or a fabric care composition comprising such a hybrid protein wherein the hybrid protein comprises a CBD linked through an amino acid linker to an inactive softening protein, and a detergent composition comprising such a hybrid protein and a fabric care ingredient such as a cationic surfactant, a clay additional enzyme such as a transferase and/or mixtures thereof.

Schulein et al. provides a composition comprising a CBD and Gilkes et al. teach methods of making a hybrid fabric softening protein by making use of a CBD from *C.fimi* or such other CBDs and linking such CBDs to a softening proteins which may be active or inactive proteins through an amino acid linker, see pages 5 through 7. However, the references do not teach the use of a specific construction of a double CBD such as that described in claim 20 of the instant application.

Linder et al. teach the construction of a double CBD in which they fuse the N-terminal CBD of *T.reesei* CBHII to the c-terminal CBD of CBHI by a linker region of 24 amino acids. Linder et al. show that the double CBDs that they have constructed results in a higher binding affinity than either of the two single domains by themselves.

The art of detergent composition teaches the use of cationic surfactants to increase the efficiency of the detergents as also the use of clay, other enzymes such as transferases and or mixtures thereof.

Armed with the teaching of Gilkes et al. to construct hybrid proteins which efficiently polish cellulose fibers, and with the teachings of Linder et al. that a double CBD increases the affinity of the double domains to cellulose fibers along with other general information common in the art of detergent composition, it would have been obvious to one of ordinary skill in the art to develop a fabric care composition comprising a hybrid softening protein as described in the above claims. One of ordinary skill in the art would have been motivated to do so in order to improve the efficiency of the existing detergent compositions such that the fabric which is washed using such detergent composition appears more polished after the wash. One of ordinary skill in the art would have a reasonable expectation of success as Gilkes et al. provide a step by step method for construction of a hybrid protein, Linder et al. provide the double CBD and the art provides a rich information in formulating detergent composition by addition of other components such as cationic surfactants, clay, transferases etc.

Therefore, the above claims would have been *prima facie* obvious to one of ordinary skill in the art.

Conclusion

No claims are allowed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manjunath Rao whose telephone number is (703) 306-5681. The Examiner can normally be reached on M-F from 6:30 a.m. to 3:00 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, P.Achutamurthy, can be reached on (703) 308-3804. The fax number for Official Papers to Technology Center 1600 is (703) 305-3014.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Manjunath N. Rao. Ph.D.
January 23, 2002


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